X-Mind trium, 3-in-1 extraoral imaging system (CBCT 3D, Panoramic and Cephalometric). This medical device is a class IIb device according to the applicable European Directive in force. It includes CE marking. Notified body: DNV – CE 0434. This medical device for dental care is reserved for healthcare personnel; it is not covered by health insurance providers. This equipment was designed and manufactured in accordance with an EN ISO 13485-certified quality assurance system. Please read the user guide carefully. Manufacturer: DE GOTZEN (Italy). Date of manufacture: November 2016.

### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>X-RAY SOURCE</th>
<th>CBCT</th>
<th>CEPHALOMETRIC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tube type</strong></td>
<td>High frequency DC generator</td>
<td></td>
</tr>
<tr>
<td><strong>Total filtration</strong></td>
<td>2.8 mmAl / 85 kV</td>
<td>7.0 mmAl / 90 kV</td>
</tr>
<tr>
<td><strong>Operation mode</strong></td>
<td>Continuous Pulsed</td>
<td>Continuous Pulsed</td>
</tr>
<tr>
<td><strong>Tube voltage</strong></td>
<td>60 - 85 kV</td>
<td>50 kV</td>
</tr>
<tr>
<td><strong>Anodic current</strong></td>
<td>10 mA</td>
<td>10 mA</td>
</tr>
<tr>
<td><strong>Focal point</strong></td>
<td>0.5 mm</td>
<td>0.5 mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DETECTOR</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>CMOS</td>
<td>Flat Panel CMOS</td>
</tr>
<tr>
<td><strong>FOV and format</strong></td>
<td>ø 40 x 40 mm, ø 60 x 60 mm, ø 80 x 80 mm, ø 110 x 80 mm</td>
<td>200 x 220 mm, 200 x 180 mm, 240 x 220 mm, 240 x 180 mm</td>
</tr>
<tr>
<td><strong>Pixel size/level size</strong></td>
<td>Pixel: 100 µm Level: 75 µm</td>
<td>Pixel: 100 µm Level: 100 µm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACQUISITION</th>
<th></th>
<th></th>
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<tbody>
<tr>
<td><strong>Technique</strong></td>
<td>180° single scan</td>
<td>360° single scan</td>
</tr>
<tr>
<td><strong>Exposure time</strong></td>
<td>16.8 sec</td>
<td>4 - 12 sec</td>
</tr>
<tr>
<td><strong>Scanning time</strong></td>
<td>16.8 sec - 25 sec</td>
<td>18 - 27 sec</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROGRAMS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard, child, improved orthogonality</td>
<td>Panoramic, bitewings, maxillary sinus, TMJ</td>
<td>Semi-arch, arch, full arch, sinus, ear</td>
</tr>
<tr>
<td><strong>Reconstruction time</strong></td>
<td>3 sec</td>
<td>9 sec</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMAGE FORMAT</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>File formats</strong></td>
<td>JPEG, BMP, PNG, TIF</td>
<td>DICOM 3.0, STL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MECHANICAL DATA</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Max footprint dimensions</strong></td>
<td>L 150 x W 110 cm</td>
<td>L 150 x W 172 cm</td>
</tr>
<tr>
<td><strong>Height</strong></td>
<td>Max: 235 cm</td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>170 kg (PAN) 185 kg (PAN-CBCT) 215 kg (PAN-CEPH)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IEEE</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Class and Type</strong></td>
<td>Class I, Type B</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>WORKSTATION (included with CBCT)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU</strong></td>
<td>Intel Xeon 2 GHz</td>
<td></td>
</tr>
<tr>
<td><strong>Hard Disk</strong></td>
<td>1 TB</td>
<td></td>
</tr>
<tr>
<td><strong>Graphic Processor</strong></td>
<td>NVIDIA (CUDA environment GPU family)</td>
<td></td>
</tr>
<tr>
<td><strong>RAM Memory</strong></td>
<td>8 GB</td>
<td></td>
</tr>
<tr>
<td><strong>Network card</strong></td>
<td>Dedicated 68 NIC for X-Mind trium connection</td>
<td></td>
</tr>
<tr>
<td><strong>Operating System</strong></td>
<td>Windows 7 professional 64 bits</td>
<td></td>
</tr>
</tbody>
</table>

3D technology that facilitates osseointegration with instant volume measurement and bone density assessment.
In this design of the X-Mind® Trium we have taken into account all of the possible factors influencing the image quality and image consistency, including but not limited to; stability, geometry, x-ray beam generation and processing, SW and HW based filter kernels. Together with our know-how in medical imaging and the specific implementation of a dedicated analytical algorithm, we have reached outstanding results able to provide advanced clinical outcomes and indicators for the clinical practice of the future.

The evolution of dental technology is such that we can now perform procedures which were unimaginable 10 years ago.

For example, in the field of implantology, the success rate for implant placements has progressed notably due to pre-implant procedures.

Although the implant is the key element in this revolution, it is essential to also have a high quality bone support. X-MIND TRIUM™ identifies this support and makes it possible to measure the volume immediately and assess the bone density. As dental gaps are sometimes old and associated with bone loss, a graft is often necessary to reconstruct the support which will receive the implant.

The use of PIEZOTOME® is particularly safe and atraumatic. Its fine, precise cuts offer fast healing with a dramatic drop in post-operative pain.

All of these ACTEON® innovations result from the research of 5 design offices which collaborate daily with international dental surgeons to offer patients faster, more natural results while minimizing possible operative sequelae.

Bone density information, obtained using X-Mind® Trium, supports the diagnosis based on other clinical data, under the expertise and supervision of the clinician.
INSTANTLY ASSESS BONE DENSITY AND VOLUME

A RELIABLE ASSESSMENT OF BONE QUALITY WILL HELP YOU IMPROVE YOUR SUCCESS RATE

Easy-to-use software
A precise and detailed analysis of the existing bone volume is highly recommended in order to reduce complications associated with implant placement.

The ACTEON® Imaging Suite 3D software displays the assessment of bone density all around the implant with just one click.

Communicate with the patient
If bone volume is low, the images and information supplied by the ACTEON® Imaging Suite 3D software can help you clearly explain your therapeutic recommendation to your patient.

This explanation is particularly helpful if surgery and/or bone filling is necessary.

Indicator colors
Bone density information is clearly represented by the colors red and green.

- High density
- Low density
Combined with its ACTEON® Imaging Suite software, X-Mind® Trium is an essential tool for planning the treatment and post-procedure follow-up. Its 3D imaging offers high precision of the anatomy from a single scan and provides a full understanding of the patient's jaw. Its results are quick and accurate, thereby streamlining your workflow.

1. Locating and tracing the mandibular canal precisely is the first step in the implant planning procedure. It also measures the distance between the canal boundary and the implant.

2. 3D modelling can then be used to choose the size and shape of the implants in proportion to the patient's morphology based on a substantial and scalable implant library. Better still, you start by putting the crown in place, which serves as a guide for better positioning of the implant.

3. ACTEON® Imaging Suite gives useful information to assess volume and bone density for implant placement, which can effectively be used to guide the diagnosis and surgical treatment.

4. ACTEON® Imaging Suite exports imaging data generated by X-Mind® Trium scans in STL format. This data can be imported into a surgical guide design software.

5. In less than a minute, you can produce and print a full implant report, to illustrate your written report (required). This illustrated report can also help you better inform your patient or a referring dental surgeon.
DETAILED IMAGING FOR ENDODONTICS

A THREE-DIMENSIONAL IMAGE FOR A MORE ACCURATE DIAGNOSIS

5 REASONS TO USE DETAILED IMAGING

- Provide additional examination to 2D imaging in high-risk situations
- Highlight the list of potential risks prior to surgery
- Obtain very precise information about anatomical relationships
- Procure valuable support in making a decision for a safe and good therapy
- Accurately determine the working length of the tooth when resuming treatment

Through its performance, X-Mind® Trium contributes significantly to the accuracy of endodontic analyses, such as:

- The apex/sinus relationship
- The diagnosis of apical lesions
- The determination of the anatomy of dental roots
- The diagnosis of fractures

The determination of the anatomy of dental roots
The diagnosis of apical lesions and the diagnosis of fractures
The apex/sinus relationship
Many More Clinical Benefits Than You Can Imagine

Huge Variation of Applications

In addition to applications designed exclusively for implantology or endodontics, X-Mind® Trium responds directly to the needs of specialists and general practitioners in the diagnosis of pathologies related to periodontics, orthodontics and maxillofacial surgery. Benefits include:
- Evaluating a detailed morphology of the bone tissue
- Helping to diagnose infectious diseases
- Examining maxillofacial fractures
- Determining the protocol for extracting impacted teeth
- Conducting an orthodontic assessment
- Detecting dental anomalies
- Helping to diagnose temporomandibular joint disorders
- Exploring the maxillary sinuses

Focus on the Region of Interest

X-Mind® Trium offers you a broad selection of field of view, letting you focus on the region of interest for the target diagnosis and reducing the patient’s exposure to X-rays:

- A 40x40 mm field of view is ideal for diagnosis and endodontic treatment.
- A 60x60 mm or 80x80 mm field of view will be optimal for defining the positioning of one or more implants or for diagnosing periodontal problems.
- A 110x80 mm field of view will offer a full view of the dentition, mandibular canal and lower sinuses.
**EXCEPTIONAL IMAGE QUALITY**

**X-Mind® Trium** has a scanning and reconstruction algorithm that produces a high quality 3D image. The representation of bone material in the maxillofacial skeleton is accurate and perfectly uniform, regardless of the viewing axis.

A HIGHER RESOLUTION 75 µm

The quality of the diagnosis and endodontic treatments improves significantly with resolution at 75 µm on the **X-Mind® Trium**.

In addition to obtaining a perfect view through adapted spatial resolution, pulsed mode scanning, high sensitivity CMOS sensor, and the use of small fields of view allow for a notable reduction in X-rays.

**360° ROTATION FROM 18 TO 27 SECONDS DEPENDING ON THE SELECTED FIELD OF VIEW**

**X-Mind® Trium** offers you a broad selection of field of view, letting you focus on the region of interest for the target diagnosis and reducing the patient’s exposure to X-rays.
X-Mind® Trium is equipped with a dynamic artifact reduction filter to eliminate streaks and dark bands caused by the presence of metal.

The image can be freely reconstructed with adjustable filter levels based on the target level of information and the need to cut out artifacts.

The goal is to best isolate the desired information during the examination.
PANORAMIC MODE & CEPHALOMETRIC MODE

PANORAMIC RADIOGRAHY

Whether raw or filtered to optimize the details, panoramic X-Mind® Trium images support a fast and easy diagnosis.

DENTAL PANORAMIC

PANORAMIC WITH IMPROVED ORTHOGONALITY

X-ray beam perpendicular to the jaw for better orthogonality and to reduce the overlapping of crowns.

CHILD PANORAMIC

BITEWING

A quick bitewing image in one shot

CEPHALOMETRIC RADIOGRAHY

Due to its patented cinematic and collimation, patient positioning is easier on X-Mind® Trium. Install the cephalometric arm on the right or left, depending on the configuration of the office.

TMJ SECTIONS

Both open and closed mouth images

MAXILLARY SINUS

Frontal views of the lower portion of the maxillary sinus and paranasal area

FULL SKULL

LATERAL

POSTERIOR

ANTERIOR

CARPUS
The ACTEON® Imaging Suite software offers intuitive navigation with the mouse and advanced functionality. It alone lets you manage all of your images, from scanning to viewing images from all ACTEON® imaging devices (CBCT, Panoramic, intraoral digital X-ray system, intraoral camera, etc.) and much more.

**COMPREHENSIVE SOFTWARE**

**ADVANCED FUNCTIONALITY FOR INTUITIVE NAVIGATION**

- Implant planning
- Crown placement
- Mandibular nerve tracing
- Easy navigation in different sections
- Mouse control
- Bone density assessment and volume measurement
- Surface, distance and angle measurement
- Substantial and scalable implant library
- Printed implant report
- Sharing of information on a network
- Cases exported on a CD or USB key
- Exported in STL format
- Metal artifact reduction filter
- Panoramic and cephalometric image detail optimization filter
- Virtual endoscope
- Integrates with various patient management software
- DICOM compatible

**A QUALITY IMAGE VIA AN INTERFACE THAT IS SIMPLE, QUICK, INTUITIVE**

**ACTEON SERVICE I & YOU I**

“Clinical trainers” are available to show you the clinical aspects and patient benefits of ACTEON® products and train you on how to use them.

Free, ongoing and unlimited service can be reached Monday to Friday, from 9:00am to 7:00pm.

ACTEON® can also analyze and troubleshoot remotely, and specialist technicians can provide on-site service as quickly as possible.
The introduction of 3D medical scanners has provided significant benefits for the diagnosis of complex diseases. Cone Beam Computed Tomography (CBCT) machines, have made these exams more common, making it possible to provide better diagnoses within the dental office.

ACTEON® is fully involved in this technological revolution by providing effective extraoral solutions for diagnosis that are comprehensive in their use and fully meet the expectations of dental surgeons and their patients.

Owning your own ACTEON® 3D extraoral imaging system in your office is a great asset for quick and accurate diagnoses, saving time and improving your patient’s satisfaction.

The three-dimensional image on the screen lets you provide your patient with the necessary up to date information. In addition, this demonstration and its illustrated explanations will be crucial in obtaining the patient’s full involvement and agreement with the proposed treatment plan. Finally, X-Mind® Trium allows you to print a full illustrated implant report in just a few seconds to be provided to your patient and/or their referring dental surgeon.

Beyond the simple replacement of missing teeth, increased life expectancy and aesthetic concerns have led to the development of implant procedures. Patients now have the opportunity both to improve their quality of life through the latest restorative techniques and, with the help of CBCT, to obtain a faster and more accurate diagnosis with a less exposure to X-rays.
3 SOLUTIONS IN 1

SELECT NOW, IMPROVE LATER

- X-Mind® Trium has an extensive range of options. It is upgradable on site.
- X-Mind® Trium will adapt to the ever increasing needs of your clinic by adding 3D imaging or digital cephalometric modalities when you decide it is necessary.